



ASSESSING FECAL SAMPLES AS A VIABLE SOURCE FOR AVIAN RETROVIRUS TESTING

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Reticuloendotheliosis virus (REV) and lymphoproliferative disease virus (LPDV) are avian retroviruses that can suppress the immune system of Galliformes such as turkeys. Our lab developed a multiplex quantitative polymerase chain reaction (qPCR) assay to simultaneously test for REV and LPDV integrated proviral DNA, and an internal control pan-avian gene, glyceraldehyde-3-phosphate dehydrogenase (GAPDH). Previously, blood samples collected in partnership with the Texas Parks and Wildlife Department were tested for avian retroviruses using our assay. However, blood collection requires the capture of birds which poses risks to both the turkeys and workers, depends on specialized training, equipment, and supplies, and requires compliance oversight. As an alternative to invasive blood collection, we proposed to test non-invasive fecal samples since REV can be detected in the feces of infected birds. Both fresh and dry fecal samples from various bird species were collected at Timberlake Biological Field Station in addition to fecal samples from domesticated chickens. The DNA was extracted for standard PCR and qPCR to detect GAPDH amplification. Amplicons were also resolved and visualized by gel electrophoresis. If DNA extraction and amplification methods were successful, then fecal samples could be used as a viable source for testing avian retroviruses.